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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,729	08/20/2003	Purna Mohanty	ADAPP244	8211

25920 7590 10/20/2006

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EXAMINER

PARIHAR, SUCHIN

ART UNIT PAPER NUMBER

2825

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/645,729	MOHANTY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Suchin Parihar	2825	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on amendment filed on 7/28/2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-9 and 11-20 is/are rejected.
- 7) ☒ Claim(s) 6 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This office action is response to application 10/645,729, filed on 8/20/2003, amendment filed on 7/28/2006. Claims 9-12 are currently amended. Claims 1-20 are pending in this application.

Applicant's remarks filed 7/28/2006 have been fully considered but they are not persuasive. The applicable rejections from the prior office action are incorporated herein.

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features recited in claim 7: "translating each text based task associated with the verified test case to a compiled hardware description language (HDL) task", must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Examiner suggests incorporating this inventive step into Figures 3 and/or 4.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

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consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1, 3, 5, 9, 12-14, 16, 18 and 20 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Hartman et al. (US PG Pub 2003/0208351) in view of Akin et al. (6,182,245).

4. With respect to claim 1, Hartman teaches: identifying a test case associated with a client (pg 9, paragraph [0153], i.e. test suite generated for a number of clones [clones are associated with a client(s)]), submitting the test case to a pre-initialized simulation server from the client (pg 5, paragraph [0091], i.e. test cases provide input to the execution engine, wherein in the execution engine acts as a server because it serves the client/server system, see Figure 2), executing the test case on the pre-initialized simulation server (pg 5, paragraph [0092], i.e. discussion of execution engine executing test cases), communicating results from the test case execution to the client (see

Figures 1 and 2: execution engine 10 of Figure 1 provides test case results #38, and outputs it to the client/server SUT of Figure 2, consider [Figure 2] the input/output relationship between the execution engine #12 and the SUT block), and executing a reset and initialization sequence at the pre-initialized simulation server to maintain the pre-initialized simulation server in an initialized state for a next test case (pg 10, paragraph [0161], i.e. server system that is able to process a next test case, also see Figures 12A and 12B). Hartman does not teach: verifying the test case at the client. However, Akin teaches: verifying the test case at the client (client sending test case instruction to server in order to obtain most accurate test case data from test-case data server [i.e. verifying the test case by obtaining the expected result of that test case], wherein that data is retrieved by the client system, Col 4, lines 55-62, in conjunction with Figure 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Hartman into the invention of Akin because Hartman would improve the invention of Akin by allowing Akin to evaluate the same test case repeatedly or evaluate the next test in a group/suite of test cases, prior to ending the testing process.

5. With respect to claim 9, Hartman teaches: executing a reset and initialization sequence at a server to maintain the server in an initialized state (pg 10, paragraph [0162], i.e. if there is another test case, control resets back to step 166 of Figure 12A wherein another next state can be processed at the server); executing the test case and recording results associated with execution of the test case (pg 5, paragraph [0090], i.e. execution engine executes test cases and provides validation results which are logged);

communicating the results to the client (see Figures 1 and 2: execution engine 10 of Figure 1 produces test case results #38, and outputs it to the client/server SUT of Figure 2, consider [Figure 2] the input/output relationship between the execution engine #12 and the SUT block, client has capability of receiving test results): resetting the server to maintain the initialized state for receiving a next test case (pg 10, paragraph [0162], i.e. if there is another test case, control resets back to step 166 of Figure 12A wherein another next state can be processed at the server). Hartman does not teach: receiving a verified test case from a client in communication with the server. However, Akin teaches: receiving a verified test case from a client in communication with the server (test client A issues test case instruction to test server, Col 4, lines 50-55). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Hartman into the invention of Akin because Hartman would improve the invention of Akin by allowing Akin to evaluate the same test case repeatedly or evaluate the next test in a group/suite of test cases, prior to ending the testing process.

6. With respect to claim 14, Akin teaches: a client, the client configured to identify a test case (description of test case data, Col 4, lines 48-55) for simulation with the integrated circuit design (Col 4, lines 35-37), the client further configured to generate a verified file (test case data element, Col 4, lines 55-62) from the test case (description of test case data); a server (software program A, see Figure 3) in communication with the client; the server configured to maintain an initialized state, the server when in the initialized state configured to receive the verified file (test case data element –Directory Structure 318, Col 4, lines 55-62) from the client for execution, wherein after execution

of the verified file, the server is enabled to communicate results (actual results from execution, Col 4, lines 65-67) to the client. Akin does not teach: the server resets to the initialized state. However, Hartman teaches: the server resets to the initialized state (see Hartman, Figure 12B, system prepared to reset/loop-back to process next test case or repeat current test case; also see discussion of Figure 12 starting on pg 9, paragraph [0151]). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Hartman into the invention of Akin because Hartman would improve the invention of Akin by allowing Akin to evaluate the same test case repeatedly or evaluate the next test in a group/suite of test cases, prior to ending the testing process.

7. With respect to claims 3, 13 and 18, Akin in view of Hartman teaches all the elements of claims 1,9 and 14, from which the claims 3, 13 and 18 depend respectively. Hartman teaches: wherein the results, or program instructions for communicating the results, are formatted as a results.log file and/or are generated as a results.log file (the output of the validation engine 36 is logged as validation results, pg 5, paragraph [0091]).

8. With respect to claims 5 and 12, Akin in view of Hartman teaches all the elements of claims 1 and 9, from which the claims depend respectively. Hartman teaches: wherein communicating the results to the client includes uninitializing the simulation server (client clones disconnect from the server sequentially following execution of test case, pg 6, paragraph [0106])

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9. With respect to claim 16, Akin in view of Hartman teaches all the elements of claim 14, from which the claim depends. Akin does not teach: a network providing a communication pathway between the server and the client. However, Akin teaches: a network providing a communication pathway between the server and the client (client system A is remotely coupled to test server by communications network, Col 4, lines 25-30).

10. With respect to claim 20, Akin in view of Hartman teaches all the elements of claim 14, from which the claim depends. Hartman does not teach: wherein both the client and the server are general-purpose computers. However, Akin teaches: wherein both the client (client test system A is a computer system, Col 4, lines 25-35) and the server (assumed to be a computer system, as it is described operating in a network, Col 4, lines 25-35) are general-purpose computers.

11. **Claims 4 and 19 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Hartman et al. (US PG Pub 2003/0208351) in view of Akin et al. (6,182, 245), and in further view of Conan et al. (6,810,364).

12. With respect to claims 4 and 19, Hartman in view of Akin teaches all the elements of claims 1 and 14, from which the claims depend respectively. Hartman in view of Akin does not teach: providing a queue associated with the pre-initialized simulation server, the queue configured to store the test case. However, Conan teaches: providing a queue associated with the pre-initialized simulation server, the queue configured to store the test case (server accesses three data resources including an active job queue and a complete job queue, Col 4, lines 55-60). Also, this queue is



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enabled to store a plurality of verified files, said files simply being test cases that have checked syntax and format of data. It would have been obvious to one of ordinary skill in the art to incorporate Conan into the invention of Hartman/Akin because a series of job queues enables Hartman/Akin to perform test-case based testing in a first-in-first-out ordering, as the queue would imply, therefore improving the invention of Hartman/Akin.

13. **Claims 2, 7-8, 11, 15 and 17 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Hartman et al. (US PG Pub 2003/0208351) in view of Akin et al. (6,182,245), and in further view of Danialy et al. (US PG Pub 2002/0073374).

14. With respect to claim 2, Hartman in view of Akin teaches all the elements of claim 1, from which the claim depends. Hartman in view of Akin fails to teach: wherein the method operation of verifying the test case at the client includes checking a syntax and a format of tasks defining the test case. However, Danialy teaches: wherein the method operation of verifying the test case at the client includes checking a syntax and a format of tasks defining the test case (syntax which may be used to specify test steps, test groups and runtime parameters, pg 4, paragraph [0043]). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the invention of Danialy into the Hartman/Akin combination because Danialy improves the testing process of Akin/Hartman by providing a specific syntax and format for which test cases must follow to make the testing process more efficient.

15. With respect to claim 15, Hartman in view of Akin teaches all the elements of claim 14, from which the claim depends. Hartman in view of Akin does not teach: a storage medium in communication with the server, the storage medium configured to

store compiled hardware description language based tasks corresponding to text based tasks associated with the verified file. However, Danialy teaches: a storage medium in communication with the server, the storage medium (embedded test IP access data, see Figure 4) configured to store compiled hardware description language based tasks (architecture description involved in producing a sequence of all of the instructions necessary to affect the test step specification [tasks], pg 5, paragraph [0067]) corresponding to text based tasks associated with the verified file (wherein verified file is the text-based test configuration file 50 of Figure 4, thus said association exists).

16. With respect to claim 17, Hartman in view of Akin teaches all the elements of claim 14, from which the claim depends. Hartman in view of Akin fails to teach: wherein the verified file includes a sequence of text-based tasks. However, Danialy teaches: wherein the verified file includes a sequence of text-based tasks (test configuration file [see Figure 2] illustrates the syntax used to specify test steps [tasks] which are text-based).

17. With respect to claims 7 and 11, Hartman in view of Akin teach all the elements of claims 1 and 9, from which the claims depend respectively. The Hartman/Akin combination fails to teach: translating each text based task associated with the verified test case to a compiled hardware description language (HDL) task. However, Danialy teaches: translating each text based task associated with the verified test case to a compiled hardware description language (HDL) task (i.e. test design data file [i.e. test case] are in the form of text files with component descriptions specified in Hardware Description Language HDL format, pg 3, paragraph [0040]).

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18. With respect to claim 8, Hartman in view of Akin and in further view of Danialy teaches all the elements of claim 7, from which the claim depends. Hartman teaches: wherein the compiled HDL task is stored on a storage media associated with the simulation server (see Fig 2, test suite 30 [storage media] stores test cases 40 [sequences of stimuli – i.e. tasks] which are associated with the execution engine 12 [simulation server]).

***Allowable Subject Matter***

19. Claims 6 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. With respect to claims 6 and 10, the prior art made of record fails to teach:  
associating text file based tasks of the test case to hardware description language HDL based tasks; and  
executing the HDL based tasks on a model of an integrated circuit design associated with the simulation server.

***Response to Arguments***

21. Applicant's remarks filed 7/28/2006 have been fully considered but they are not persuasive.

22. Applicant asserts that Hartman does not suggest or teach initializing the execution engine. Examiner disagrees with this assertion.

Examiner points out Figure 12 of Hartman wherein steps 176,180 loop back to the beginning of step166 “start [i.e. initialize] execution engine”.

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23. Applicant asserts that the prior art made of record does not teach or suggest verifying for format or syntax errors of the test data at the client. Examiner disagrees with this assertion.

Examiner points out Danialy pg 4 paragraph [0043] which discusses checking a syntax and a format [i.e. a way to specify test steps as in Fig 2] of tasks defining the test case [i.e. test configuration file 50].

24. Applicant asserts that Akin and Hartman do not teach uninitializing and re-initializing of the server after each test case. Examiner disagrees with this assertion.

Examiner points out that Hartman teaches re-initializing at Fig 12 step 166 wherein the “start execution engine” may be repeated several times. Examiner also points out that Hartman teaches uninitializing the simulation server (clones disconnect [i.e. uninitializing] sequentially from the server, pg 6, paragraph [0106]).

25. Applicant asserts that the combined teachings do not teach or suggest verifying the test case at the client prior to submitting the test case to a pre-initialized simulation server. Examiner disagrees with this assertion.

Examiner points out that Akin teaches: verifying [i.e. obtaining expected results, see Fig 3, expected results in box 324 –Design 1] the test case at the client prior to submitting the test case to a pre-initialized simulation server (after access to the desired test case data is established [i.e. obtaining expected results –“verifying”], test program A [i.e. simulation server/device/apparatus] issues execution instruction [i.e. verifying takes place prior to submitting test case to simulation/execution server i.e. Software Program A)).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

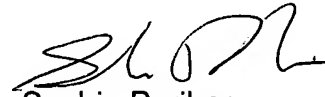
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suchin Parihar whose telephone number is 571-272-6210. The examiner can normally be reached on Mon-Fri, 8:30am-5:00pm.

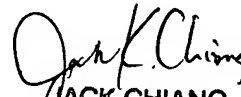
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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